Hydraulic Analysis Report

Channel Analysis: Channel Analysis South Cross Section (ANALYSIS POINT "B")

Input Parameters

Channel Type: Cross Section at South End

Cross Section Data

Station ft	Elevation ft	Manning's n
0.00	89.50	0.0170
25.00	88.90	0.0170
75.00	89.20	0.0170
75.10	93.20	-----

Longitudinal Slope: 0.0039 ft/ft

Flow: 23.4800 cfs

Result Parameters

Depth: 0.3527 ft

Area of Flow: 12.7251 ft^2

Wetted Perimeter: 64.7526 ft

Hydraulic Radius: 0.1965 ft

Average Velocity: 1.8452 ft/s

Top Width: 64.6961 ft

Froude Number: 0.7332

Critical Depth: 0.3140 ft

Critical Velocity: 2.2892 ft/s

Critical Slope: 0.0077 ft/ft

Critical Top Width: 63.0856 ft

Calculated Max Shear Stress: 0.0858 lb/ft^2

Calculated Avg Shear Stress: 0.0478 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0170

Channel Analysis: Channel Analysis North Cross Section (ANALYSIS POINT "C")

Input Parameters

Channel Type: Triangular

Side Slope 1 (Z1): 41.6700 ft/ft

Side Slope 2 (Z2): 31.6500 ft/ft

Longitudinal Slope: 0.0039 ft/ft

Manning's n: 0.0170

Flow: 30.9300 cfs

Result Parameters

Depth: 0.5905 ft

Area of Flow: 12.7821 ft^2

Wetted Perimeter: 43.3104 ft

Hydraulic Radius: 0.2951 ft

Average Velocity: 2.4198 ft/s

Top Width: 43.2940 ft

Froude Number: 0.7848

Critical Depth: 0.5380 ft

Critical Velocity: 2.9154 ft/s

Critical Slope: 0.0064 ft/ft

Critical Top Width: 40.1937 ft

Calculated Max Shear Stress: 0.1437 lb/ft^2

Calculated Avg Shear Stress: 0.0718 lb/ft^2

Channel Analysis: Channel Analysis at North Turn (ANALYSIS POINT "D")

Input Parameters

Channel Type: Triangular

Side Slope 1 (Z1): 31.2500 ft/ft

Side Slope 2 (Z2): 27.8600 ft/ft

Longitudinal Slope: 0.0039 ft/ft

Manning's n: 0.0170

Flow: 30.9000 cfs

Result Parameters

Depth: 0.6400 ft

Area of Flow: 12.1043 ft^2

Wetted Perimeter: 37.8499 ft

Hydraulic Radius: 0.3198 ft

Average Velocity: 2.5528 ft/s

Top Width: 37.8282 ft

Froude Number: 0.7953

Critical Depth: 0.5843 ft

Critical Velocity: 3.0621 ft/s

Critical Slope: 0.0063 ft/ft

Critical Top Width: 34.6532 ft

Calculated Max Shear Stress: 0.1557 lb/ft^2

Calculated Avg Shear Stress: 0.0778 lb/ft^2

Channel Analysis: Channel Analysis at Cul-De-Sac (ANALYSIS POINT "E")

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.2400 ft/ft

Side Slope 2 (Z2): 2.2400 ft/ft

Channel Width: 10.5000 ft

Longitudinal Slope: 0.0039 ft/ft

Manning's n: 0.0170

Depth: 0.6700 ft

Result Parameters

Flow: 30.6381 cfs

Area of Flow: 8.0405 ft^2

Wetted Perimeter: 13.7871 ft

Hydraulic Radius: 0.5832 ft

Average Velocity: 3.8105 ft/s

Top Width: 13.5016 ft

Froude Number: 0.8702

Critical Depth: 0.6132 ft

Critical Velocity: 4.2083 ft/s

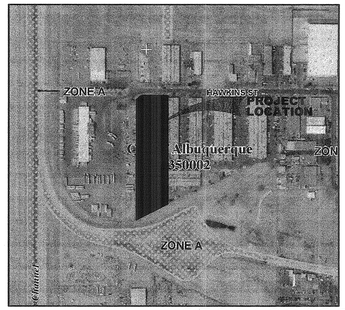
Critical Slope: 0.0053 ft/ft

Critical Top Width: 13.2469 ft

Calculated Max Shear Stress: 0.1631 lb/ft^2

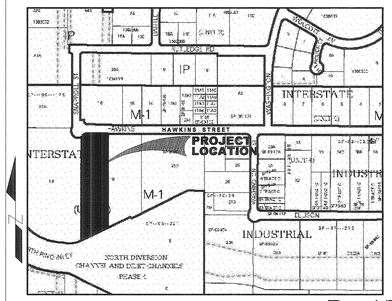
Calculated Avg Shear Stress: 0.1419 lb/ft^2

FLOOD INSURANCE RATE MAP



35001C0136G

VICINITY MAP



D-17

APPLIED ENGINEERING AND SURVEYING, INC.

CIVIL ENGINEERING, LAND PLANNING AND SURVEYING

1605 Blair Drive NE Albuquerque, New Mexico 87112
Office: (505) 480-8125 Facsimile: (505) 237-8164
email: galdaz47@yahoo.com

CONSULTANTS

PROFESSIONAL SEAL

0-23-14

3768 HAWKINS PAVING IMPROVEMENTS

ALBUQUERQUE, NEW MEXICO

MARK	DATE	DESCRIPTION
-	-	-

PROJECT NUMBER:	140101 HAWKINS
DRAWING FILE:	
DRAWN BY:	
CHECK BY:	
COPYRIGHT:	
DATE:	APRIL 21, 2014

SHEET TITLE

DRAINAGE CALCULATIONS

SHEET NUMBER

C102